

We Claim:

Sub 87

1. An implantable microcontact structure for
neuroprostheses having a number of contact elements
that are formed on at least one two-dimensional
carrier wherein the carrier has at least two regions
that are movable relative to one another and that can
assume at least two desired positions being a basic
position and an operating position.

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2. The microcontact structure according to Claim 1
wherein the desired positions of the microcontact
structure can be fixed, interchanged or altered by
external action before the implantation, during a
15 surgical intervention or by external signals without
surgical intervention.

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3. The microcontact structure according to Claim 1
wherein the spatial extent of the microcontact
structure is minimized during the surgical
transportation to the implant point by compacting the
parts that are movable relative to one another.

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4. The microcontact structure according to Claim 3
wherein the spatial extent of the microcontact
structure is minimized during the surgical
transportation to the implant point by folding,
nesting or rolling.

30 5. The microcontact structure according to Claim 3
wherein compacting of the microcontact structure
during the surgical transportation can be released
after positioning at the implantation point and
brought to one of the desired positions for the
35 purpose of mechanical anchorage to nerve tissue.

6. The microcontact structure according to Claim 3
wherein the compacting of the microcontact structure
during the surgical transportation remains locked by a
transportation lock until said transportation lock is
5 released by an external intervention.

7. The microcontact structure according to Claim 6
wherein after releasing the transportation lock, the
microcontact structure unfolds or opens out of the
10 compact transportation shape in a controlled movement
sequence into a position suitable for mechanical
anchorage as a result of releasing forces at the
junctions between the parts of the microcontact
structure.

15 8. The microcontact structure according to Claim 7
wherein the releasing forces are spring forces,
molecular conformation changes, pneumatic forces,
hydraulic forces and/or electromagnetic forces.

20 9. The microcontact structure according to Claim 1
wherein the interchange or the alteration of a desired
position of the microcontact structure for the purpose
of its mechanical anchorage on the nerve tissue takes
25 place in a measured manner in a time-controlled
sequence with respect to movement and force as a
result of external action.

10. The microcontact structure according to Claim 1
30 wherein the interchange or the alteration of a desired
position of the microcontact structure for the purpose
of optimizing a contact or an active connection with
the nerve tissue takes place in a measured manner in a
time-controlled sequence with respect to movement and
35 force as a result of an external action.

11 The microcontact structure according to Claim 9
wherein the external action takes place by means of a
surgical device or by means of transmitting signals to
the microcontact structure,

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12. The microcontact structure according to Claim 10
wherein the external action takes place by means of a
surgical device or by means of transmitting signals to
the microcontact structure, in particular by
10 electromagnetic signals, light or ultrasound.

13. The microcontact structure according to Claim 11
wherein the signals are electromagnetic signals, light
or ultrasound.

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14. The microcontact structure according to Claim 12
wherein the signals are electromagnetic signals, light
or ultrasound.

20 15. The microcontact structure according to Claim 1
wherein the interchange of the desired position chosen
for the mechanical anchorage of the microcontact
structure on the nerve tissue for the purpose of re-
explantation takes place in a measured manner in a
25 time-controlled sequence with respect to movement and
force by an external action.

16. Method for using a microcontact structure wherein the
microcontact structure according to claim 1 is used
30 for retinal implantation for a retina implant or for
intracranial implantation on nerve tissue inside the
skull or for spinal implantation on nerve tissue of
the spinal cord and its surroundings or for
implantation on peripheral nerves.